

Winter Precipitation in North America and the Pacific-North America pattern in GEOS-S2Sv2 Seasonal hindcast

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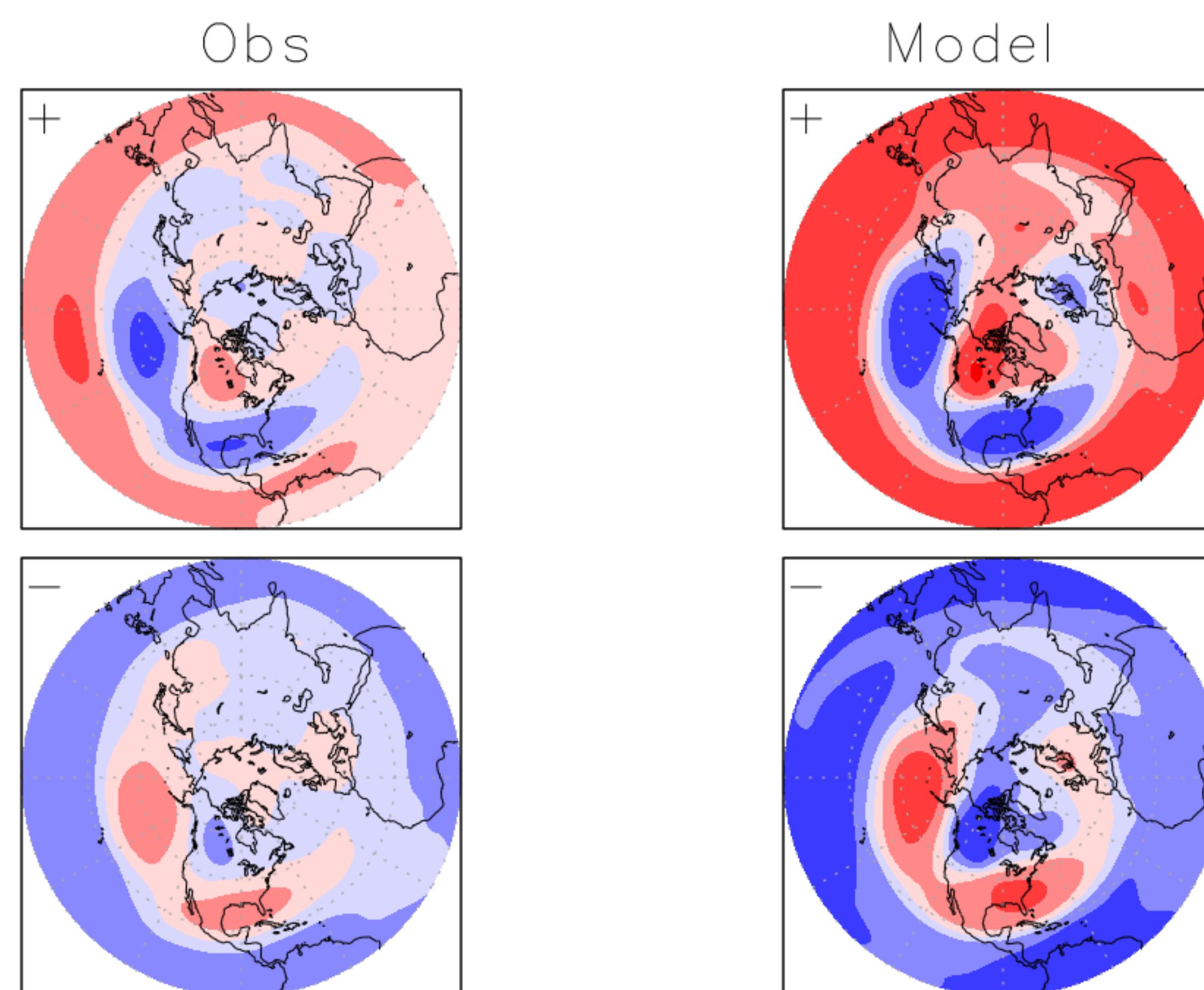
Brief overview of GEOS-S2Sv2 forecast system

- Atmospheric initial conditions are produced by a 3 hour (21z to 00z) replay of MERRA2
- Ocean initial conditions are from ODAS production
- Sea-ice initial conditions are generated using NSIDC and MERRA2
- Resolution: 1/2 degree atmosphere, 1/2 degree ocean

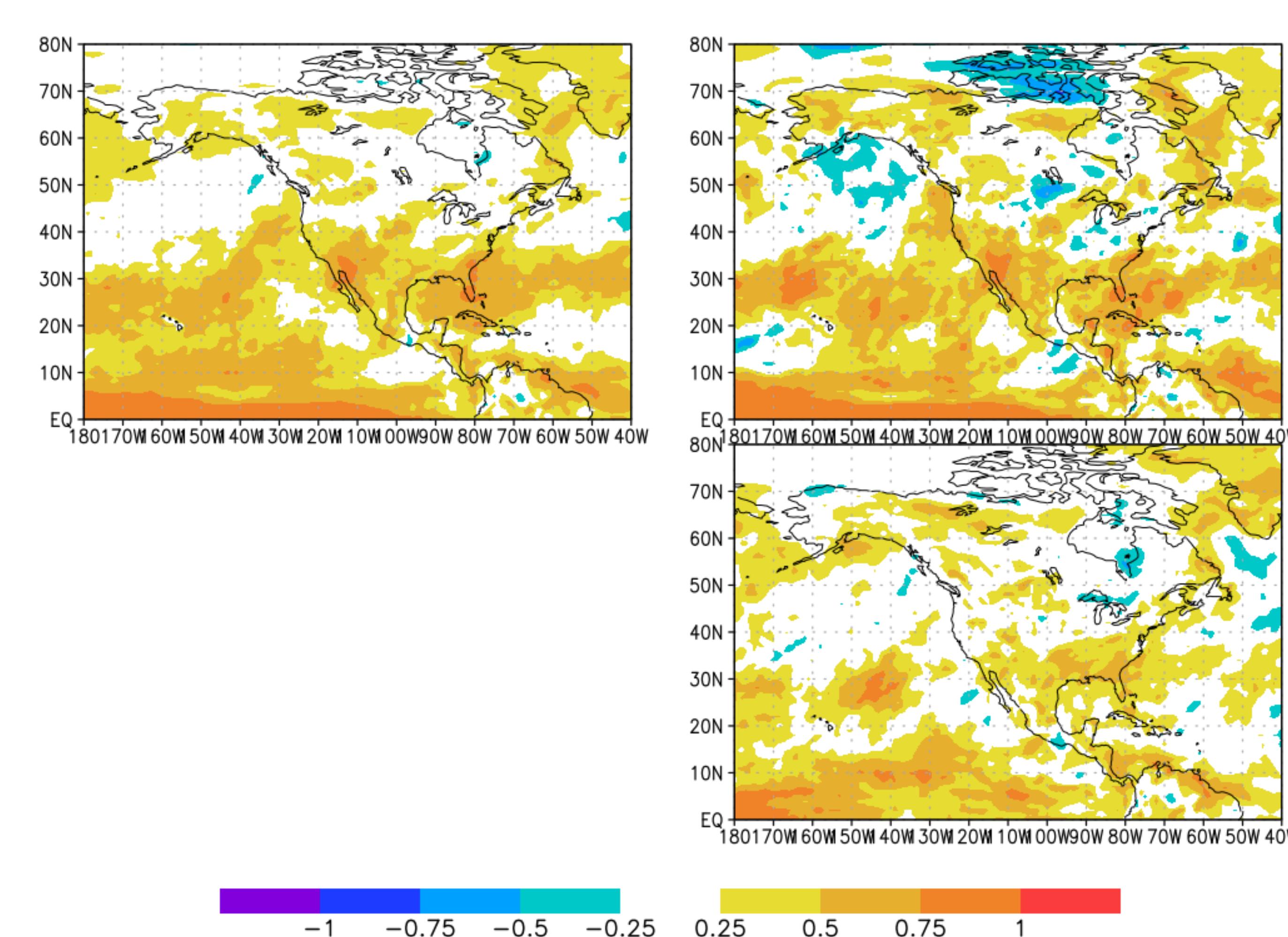
Data analyzed in this study

- Initialized every 5 days, forecast length is 9 months
- First lead month JFM monthly forecast from 1982 to 2015
- Observation data from MERRA2 Reanalysis

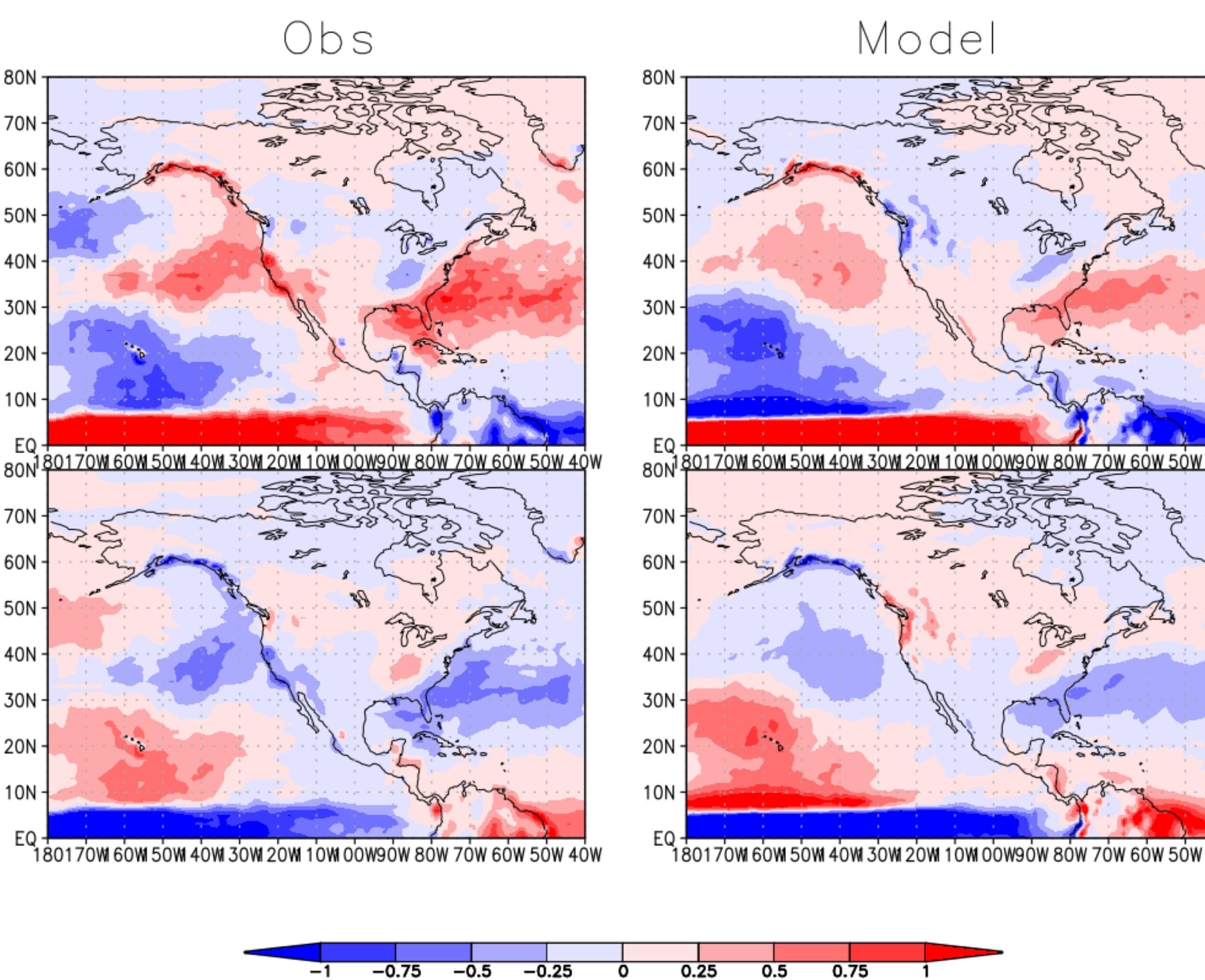
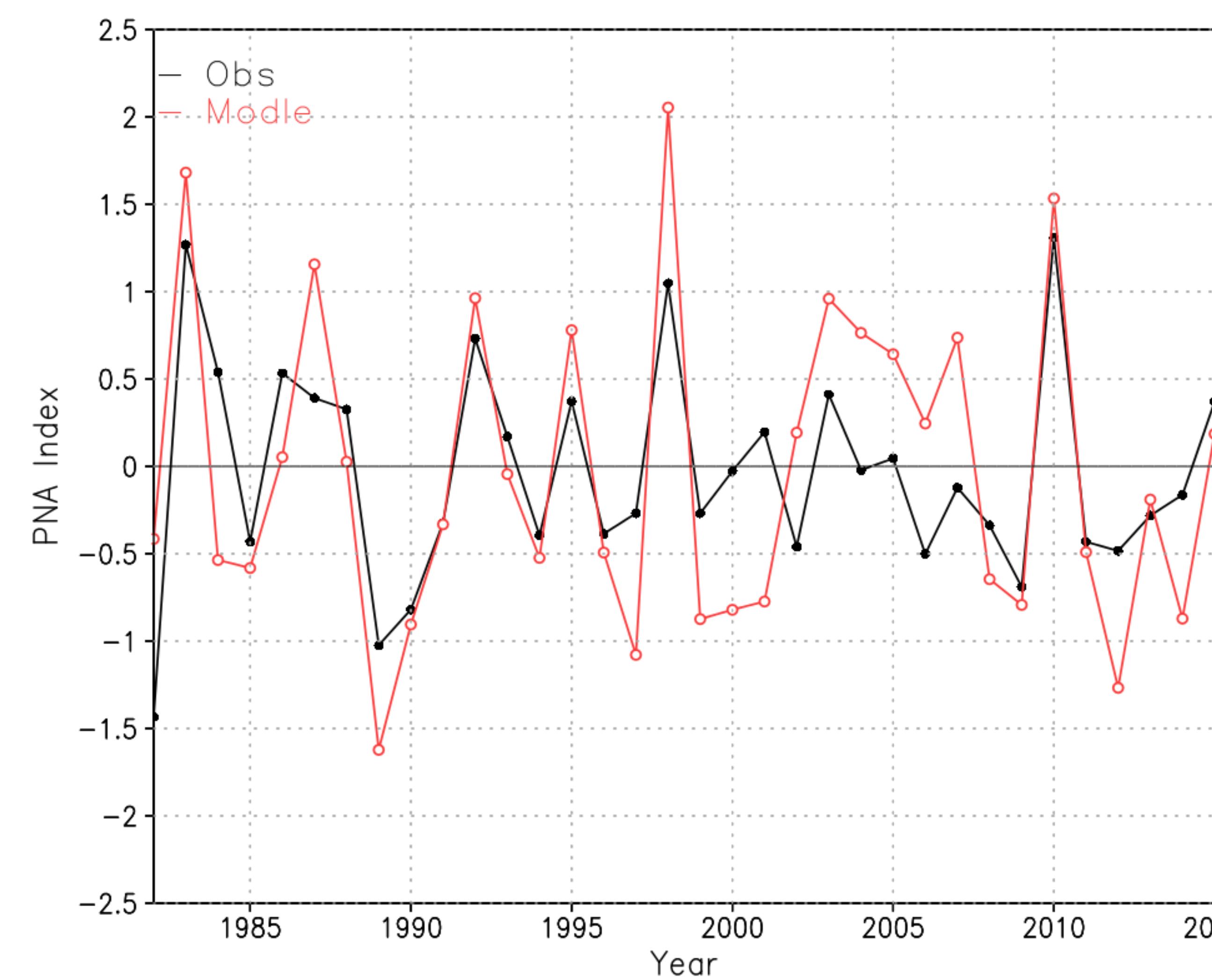
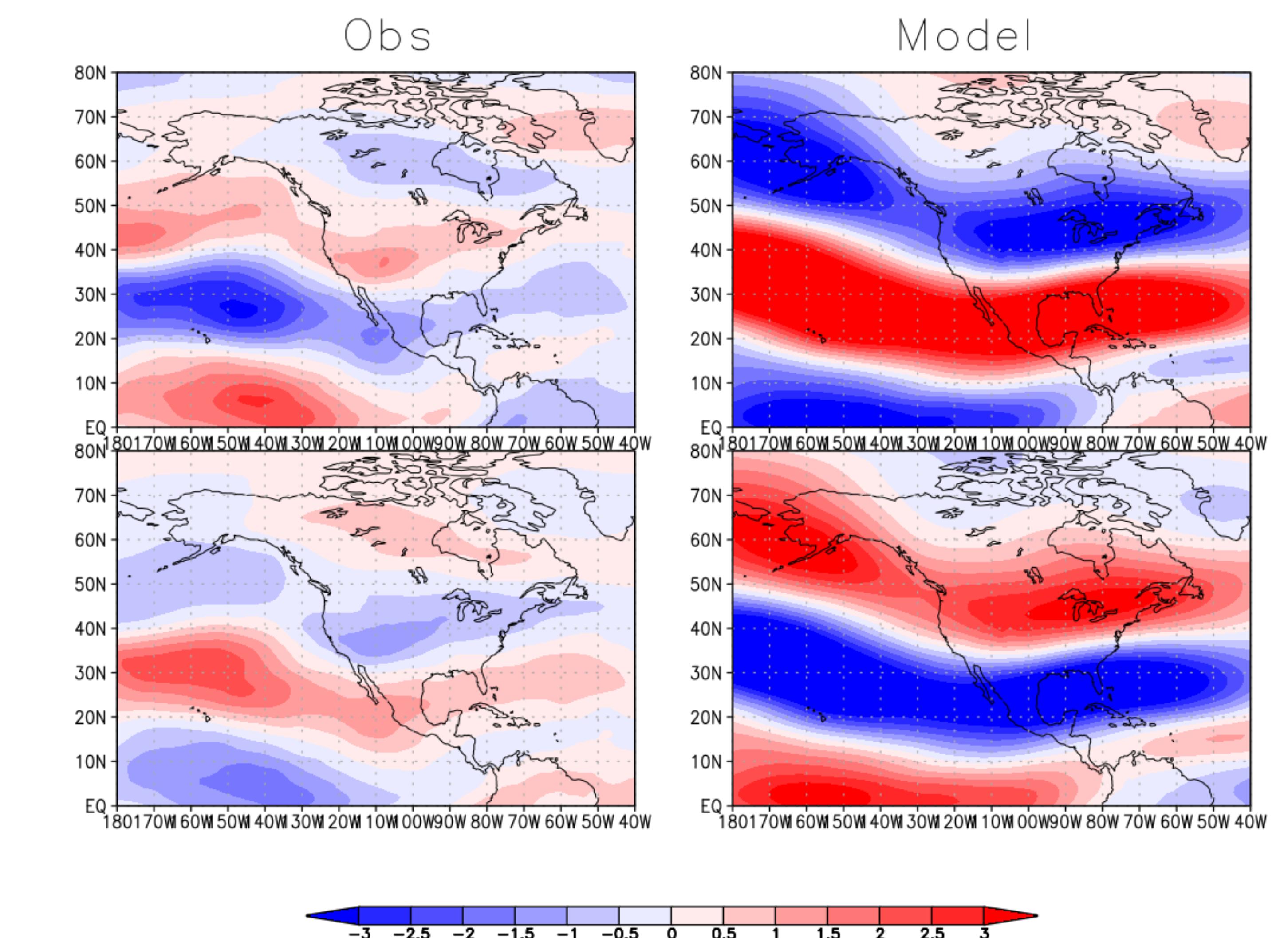
PNA in GEOS-S2Sv2 winter hindcast



precipitation in GEOS-S2Sv2 winter hindcast



u250 in GEOS-S2Sv2 winter hindcast



Summary

- GEOS-S2Sv2 captures winter PNA pattern reasonably well with overestimation of both phase of PNA
- winter precipitation forecasts have higher skills in positive PNA years
- Underestimation of winter precipitation anomaly at west coast of US may be related with south shift of jet stream in the model

